

# INTERNATIONAL SEARCH REPORT

Internal Application No  
PCT/1B 03/03695

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G06K9/00 G06K9/46

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G06K G06T

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JAIN A K ET AL: "AN IDENTITY-AUTHENTICATION SYSTEM USING FINGERPRINTS" PROCEEDINGS OF THE IEEE, IEEE. NEW YORK, US, vol. 85, no. 9, 1 September 1997 (1997-09-01), pages 1365-1388, XP000738563 ISSN: 0018-9219 page 1373, right-hand column, paragraph 5 -page 1376, left-hand column, paragraph 1 -- -/--	1-6

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
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- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
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Date of the actual completion of the international search

9 February 2004

Date of mailing of the international search report

24/02/2004

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	SIMON-ZORITA D. ET AL.: "An improved image enhancement scheme for fingerprint minutiae extraction in biometric identification " 3RD. INT. CONF. ON AUDIO- AND VIDEO-BASED PERSON AUTHENTICATION, 6 - 8 June 2001, pages 217-222, XP002269478 Halmstad, Sweden page 2 -page 3	1-6
A	IVERSON L A ET AL: "LOGICAL/LINEAR OPERATORS FOR IMAGE CURVES" IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE, IEEE INC. NEW YORK, US, vol. 17, no. 10, 1 October 1995 (1995-10-01), pages 982-996, XP000532203 ISSN: 0162-8828 abstract; figures 5,19 page 982, left-hand column, paragraph 1 -right-hand column, paragraph 1	1,2,4,5
A	DERICHE R: "USING CANNY'S CRITERIA TO DERIVE A RECURSIVELY IMPLEMENTED OPTIMAL EDGE DETECTOR" INTERNATIONAL JOURNAL OF COMPUTER VISION, DORDRECHT, NL, 1987, pages 167-187, XP000579415 abstract; figures 1,2 page 169, right-hand column, line 16 - line 20 page 178, left-hand column, paragraph 2 -page 179, left-hand column, paragraph 2	1,2,4,5
A	US 5 659 626 A (ORT JAMES R ET AL) 19 August 1997 (1997-08-19) column 19, line 60 -column 20, line 8; claim 6	2,5

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5659626	A	19-08-1997	US 5926555 A	20-07-1999
			US 5799098 A	25-08-1998